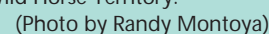


(Continued on page 4)

Chi-Chi May selected as Woman of Color All-Star... 12



That’s that

Well, *that’s* a relief.

Like just about everybody else, I’d been sort of preoccupied with the health of my 401(k) for the past few weeks. I figured I had lost – well, by the standards of my little corner of the world, I figured I’d lost a lot. I felt like the Murray Hamilton character, the mayor of Amity in the movie *Jaws*. After he realizes the shark is going to kill (so to speak) his July tourist business, he pulls out a little notebook, walks around mumbling to himself, and starts figuring that maybe somehow, some way, the numbers for August can still add up to a decent summer. There’s more than a little panic in his desperate scribblings. Like Murray, I started hearing that ominous John Williams *Jaws* theme – you know, the one with the lyrics that go da da, da da da da da da – every time I clicked on Fidelity’s website. And clicking on my personal account site? That was even worse. Seeing the numbers come up was like that scene in *Jaws* where the head rolls into view in the porthole of that sunken boat. Scary stuff.

So imagine my relief when I read over the weekend in the *Wall Street Journal* that I’ve been thinking about all this the wrong way. The writer, an obvious expert, kind of tut-tuts that so many simple folk – like me, obviously – actually think they’ve lost money in this financial crisis. Oh my goodness, he writes, your 401(k) isn’t cash; it’s not really money, so you haven’t really lost anything (you silly thing). Relax.

So I take a deep breath and follow his advice – for about 10 minutes. But then I see on Drudge that the market’s just dropped another umpteen hundred points. I pull out my little notebook, start walking around mumbling to myself . . . let’s see, if I move all those juiced-up foreign fund shares into bonds and if I up my contribution to the maximum allowable, and if I put off retiring til 2025. . . . da da, da da da da da da.

* * *

Okay, I’ve said it before, but I’ll say it again. There’s a website for absolutely everything. I was looking at the *Porcelain Press* the other day – you know how that goes – when I noticed an item on National Clean Hands Week. The brief article offered some useful tips about handwashing and also provided a link to a website for the Clean Hands Coalition. I checked it out. It’s a good site. And there are other clean hands websites out there, too. And they all make a very good case for clean hands, especially during flu season. So, no, I’m not knocking clean hands; I’m all for ‘em. It’s just that I’m amazed at the things people find to get passionate about. Isn’t it wonderful? And while I’m at it, here’s a hat tip to the *Porcelain Press*. Carol Gary, the publisher, does a terrific job rounding up fresh and useful content.

* * *

Remember there a couple of weeks ago when we got that big rain and it really felt like fall for the first time? Did you get a craving for green chile stew? I did. Speaking of which, do you remember the green chile stew that used to be a staple at the Coronado Club? Boy, was it good. Green chile stew is like pizza – what’s not to like? Frozen. Out of a box. Delivered to your front door or enjoyed at your favorite restaurant, pizza’s always good. Ditto with green chile stew. But the stew at the Coronado Club was unusually good. Chef Hank Perez worked some sort of magic with the simplest of ingredients. It was so good and so addictive that it might even set off alarm bells during the drug tests we have to take these days. Either that or melt the cups.

See you next time.

– Bill Murphy (505-845-0845, MS0165, wtmurph@sandia.gov)

Sandia LabNews

Sandia National Laboratories

http://www.sandia.gov/LabNews

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Livermore, California 94550-0969
Tonopah, Nevada • Nevada Test Site • Amarillo, Texas •
Carlsbad, New Mexico • Washington, D.C.

Sandia National Laboratories is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin company, for the US Department of Energy's National Nuclear Security Administration.

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Classified ads 505/844-4902

Published on alternate Fridays by Media Relations and
Communications Dept. 3651, MS 0165



Benefits info: UnitedHealthcare Healthy Pregnancy program

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Employee death . . .

Larry Olson and Cindy lived ‘a great love story’

Larry Olson (6326) passed away on Oct. 8. He was 50 years old. He was a database administrator and data analyst on projects for the Department of Homeland Security Critical Infrastructure Protection Division.

“Larry performed many data tasks for both infrastructure and geospatial data, as well as database design, implementation, and support for modeling on these tasks,” says his boss Stephen Kleban. “He enjoyed most working with people. He had a lighthearted personality and a positive attitude.”

“Larry was easy-going and friendly,” says James Ellison (6322). “He liked stuffed animals, which sometimes caused him unexpected ramifications. At the visit of Department of Homeland Security Secretary Chertoff about two years ago, Larry’s giant stuffed mouse on the front seat of his classic Mustang caused the US Secret Service great consternation.”

Melissa Myerly (6324) describes Larry as a grandfather who would ride the nerve-wracking, white-knuckled, nausea-inducing rides with his grandkids.

“Once in a while,” she continues, “we would look out the windows and discuss the cloud formations over the Sandia Mountains, watch the airplanes coming in for a landing, or watch the prairie dogs frolicking and grazing. He didn’t consider that a waste of time.

“On special occasions,” Melissa adds, “Larry would go to his wife Cindy’s office very early before she came in and leave her a surprise gift. She in turn would do the same, except she would come at the end of the day when she knew he had left.”

“Some of us would get together for a short break during the day to get caught up on what we were all working on. After a while we started brainstorming on an activity we could all do,” says Teresa Brown (6321). “Steve Conrad [6322] suggested we try hacky sack. Larry became the champion for the idea. It was a great success. We had a lot of talented hackers, but Larry was the most enthusiastic and the one who realized how important the activity was in bringing us all together.”

“Larry made us all laugh,” says Rich Detry (6324). “He had a fun-loving nature. Larry recently joined a lunchtime hula hoop group. It brought out all our laughs and smiles.”

“Larry even bought extra hula hoops, so that we could all use them,” says Esther Baldonado (6325).

“Larry was always ready to lend a helping hand,” says Luz Tirado (1120 & 1128). “We had moved into our new building and I was trying to set up my computer and I was a bit flustered. Larry came in and helped me. He was always willing to help any of us.”

“Larry had a great mind for details and uncovering unusual perspectives that others would skip over or miss,” says Molly Minana (6325). “On one of his birthdays he emailed us with the message ‘Bunches of bagels in all the right places’ in the subject line.

“Larry had a big bag of Portales peanuts and jar of jelly beans near the door to his office for everyone to share,” she says. “How could you not like a person who had multiple large stuffed apes hanging in his office or who rode out of the parking lot at night with a huge stuffed bear sitting next to him in the passenger seat?”

“Larry and Cindy had been married 14 years but they acted like newlyweds,” says Cindy’s boss, Dave Palmer (12800). “He was very loving and supportive. They renewed their vows on their 10-year anniversary in true Las Vegas style. Larry showed up and surprised everyone dressed in Elvis attire. For more than 10 years, Larry sent Cindy big flower arrangements to commemorate the day they first met. Theirs was a great love story.”

— Iris Aboytes



FUN-LOVING Larry Olson and his wife Cindy Olson (12800) chose an Elvis motif when they renewed their wedding vows in Las Vegas, Nev., in 2004.

Recent Patents

Note: Patents listed here include the names of active Sandians only; former Sandians and non-Sandia inventors are not included. Following the listing for each patent is a patent number, which is searchable at the US Patent and Trademark Office website (www.uspto.gov).

Perry Robertson (1711) and Edward Witzke (6432): Enhancement of Utilization of Encryption Engine (Patent No. 7,362,859)

Indoor sensor siting analysis maximizes effectiveness of chem/bio detectors

By Patti Koning

There is no question that facilities where large numbers of people congregate, such as transit centers, shopping malls, and office buildings, are potential targets for chemical and biological attacks. Deploying chemical and biological detectors is a key line of defense in preventing and mitigating such attacks.



OPTIMAL SITING — Nate Gleason (8125), left, and Luke Purvis (8114) inspect an air handling system to determine the exact placement of a biological sensor. After computer models generate sensor architecture specifications, Sandians walk the space to find the optimal placement of each sensor. (Photo by Randy Wong)

For many years, Sandia has worked with BioWatch, other Department of Homeland Security (DHS) programs, and other government agencies to determine the optimum sensor architecture, or sensor siting, for facilities throughout the nation.

Sensor siting is something we all practice when we install smoke and carbon monoxide detectors in our homes. Common sense tells us to install these detectors where fires are likely to occur — in the kitchen — and where we're most vulnerable to being surprised by a fire — in our bedrooms.

Detecting chemical and biological attacks in large facilities is much more complex. To answer this need, Sandia draws upon years of systems analysis work and the robust capabilities of the Facilities Weapons of Mass Destruction Decision Analysis Center (FacDAC).

"One of the challenges is figuring out what makes a good sensor architecture. We put a lot of effort into ways of measuring performance of architectures to figure out the appropriate metrics," says Nate Gleason (8125), manager of the advanced systems deployment group. "Detecting the smallest possible release size is not always the right goal. For BioWatch we developed a metric that looks at how many people a release will impact and then designed the system to detect all the releases of a set level of impact, which can be very different in release size."

The program focuses on three components of an end-to-end approach to facilities protection: counter-measures evaluation, system requirements, and system architecture design. Nate explains that detection must be tied to an action that will mitigate the situation. For example, can the detection system trigger an action that will save lives, such as evacuation?

An inherent problem with real-time sensors is false alarms, so any evaluation of response actions must take this into account. "Given that a sensor has a particular false alarm rate, what action is it possible to take on that sensor alarm? Evacuation wouldn't be the first action with a real-time sensor" because of that false alarm rate, explains Nate. "So we might consider changing or shutting off airflow or zone isolation."

Another aspect is the architecture of a sensor system — what types of sensors are deployed, and in what configurations and locations. For example, a system might consist of a large number of inexpensive sensors scat-

tered throughout a facility combined with a few strategically placed, high-capability sensors. An alarm by the inexpensive sensors would trigger the high-capability sensors, thus reducing the likelihood of a false alarm.

There are myriad external factors that must be considered in sensor siting — the number of people in a building, where they are congregated, the weather, when the air filters were last changed, even if a door

has been propped open. Coming up with an architecture requires analysis of millions of possible scenarios. Nate says that tracer testing in Grand Central Terminal early in the program illustrated to the researchers how significant the outside weather can be. A drop in external air temperature of about 15 F caused the air flow through the station to reverse itself from summer to fall.

In a test in another major transportation facility, the airflow was moving in the opposite direction that it should have been, in accordance with the building's design. The culprit? An employee had propped open a single door in the building.

"It's easy to design a system that works in one building for a single attack. The goal is to design something that works all the time — that can handle any scenario on any given day," says Luke Purvis (8114), who now leads the sensor siting program. "Our approach makes our recommendations robust across different building states and attack scenarios."

To provide this in-depth analysis, Sandia draws upon years of experience in chemical and biological

"It's easy to design a system that works in one building for a single attack. The goal is to design something that works all the time — that can handle any scenario on any given day."

— Luke Purvis (8114)

terrorism modeling and systems analysis, beginning with the Program for Response Options & Technology Enhancements for Chemical/Biological Terrorism (PROTECT) in 1997 and continuing with the Protective and Responsive Options for Airport Counter-Terrorism (PROACT) program in 2003.

Five years ago, PROACT began with a model of a boarding concourse of San Francisco International Airport and a simulation of how a single detector would behave in one situation. That capability has evolved to where it is today — the ability to model an entire facility with multiple detector configurations and scenarios.

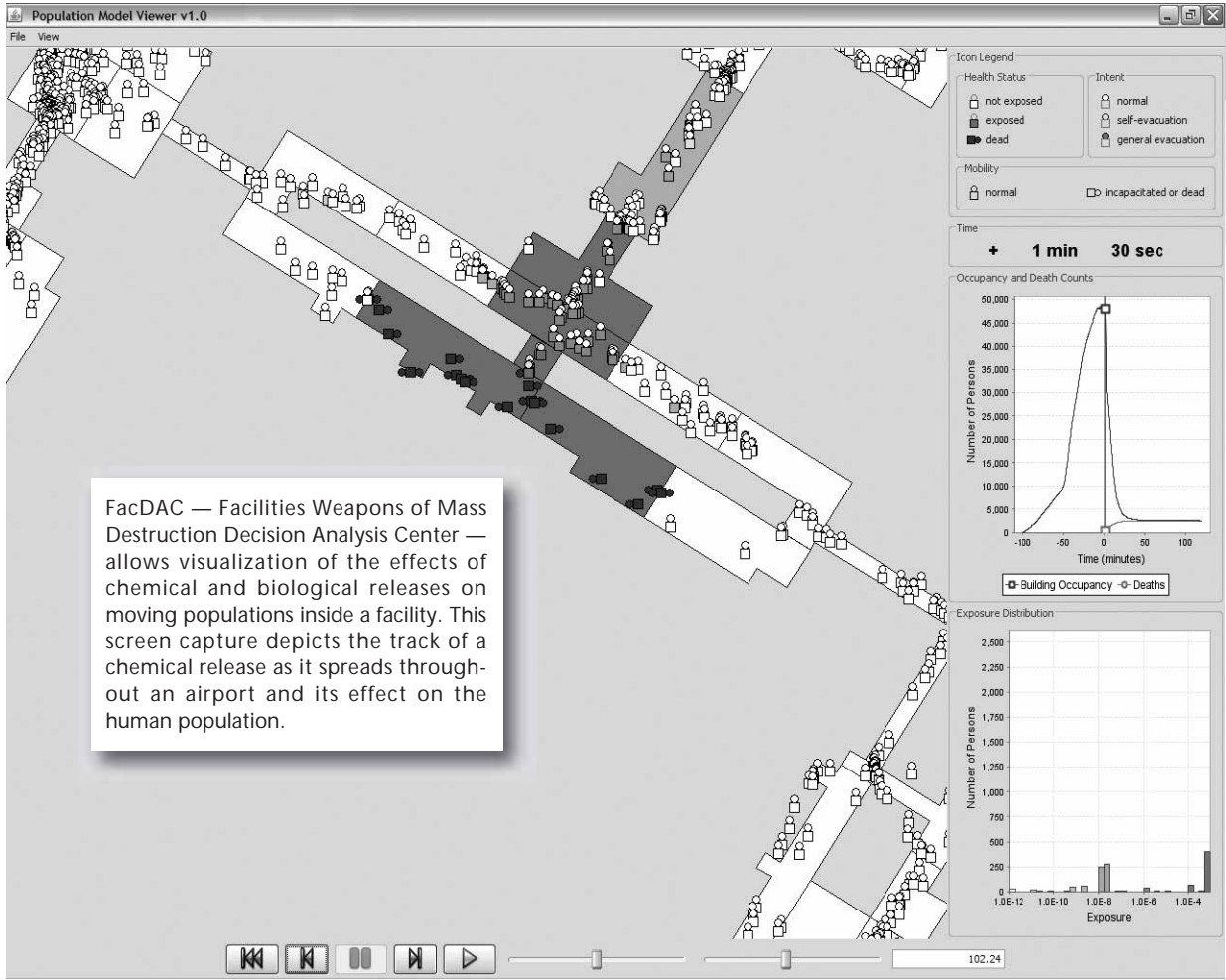
"How we think about detection and response has really changed," says Nate. "We've gone from detection as the primary goal to targeting the biggest impact release in which detection and immediate response can save the most lives."

Sandia has sited BioWatch collectors in 15 facilities, some of which are active and operating, and helped develop requirements for the Bioagent Autonomous Networked Detector (BAND) detection system, which is being developed to replace the current BioWatch detectors. Sandia is also siting chemical detectors for a number of unique chemical agents.

Looking forward, Nate says that the biggest challenge is developing metrics. "This is where we are taking advantage of the full FacDAC capability, using moving population models and incorporating actual responses. We're looking beyond 'can a detector detect' and at the value it provides for the goal of saving lives."

He adds that another goal is to simplify the process, so the analysis doesn't necessarily have to be conducted by Sandia scientists. "One day we'd like to have a tool that we can hand to a facility engineer to help them protect their building. If chemical or biological detection becomes as ubiquitous as smoke detectors, clearly Sandia can't site everything."

Sandia CaliforniaNews



Sled track

(Continued from page 1)

accident have been turned over to DOE investigators. Noting that the Secretary of Energy had been briefed and the state’s congressional delegation notified, Tom said, “Things of this seriousness go right to the top of the organization.” He added that Sandia Chief Protection Officer and Div. 4000 VP Mike Hazen has been assigned as the liaison to the DOE Accident Investigation Board.

Sandia will also establish its own safety review team, Tom said, one made up of people from inside and outside the labs. The team will be headed by Al Romig. Its primary charge will be to look at the issue of safety broadly and examine Sandia cultural, systemic, and technical issues that may contribute to unsafe conditions in the workplace.

The accident, Tom said, posed for him a personal contrast of feelings. On the one hand, he noted that his periodic no-notice safety inspections around the Labs have convinced him that Sandia has made tremendous strides in its safety journey over the past several years. On the other hand, he says, the nature and severity of



“It’s not a good situation to be in; it’s not the kind of situation you’d like to find an institution like this in, but it is where we are and we have to move forward in a way that will make us even better.”

the sled track accident forces him to acknowledge that there are still challenges to address.

“I have not in any way lost my confidence in the progress this laboratory has made in this [safety] journey,” Tom said. “I see it in the eyes and the faces of hundreds of people I talk to around the laboratory, but I have to tell you, we have taken a step backward in the eye of those who view us and we’re going to have to spend some time rebuilding and recommitting ourselves to not only the reputation but also the fact of being at the forefront” among safety leaders in DOE.

Tom recounted that on the Thursday afternoon of the accident, he and Al were meeting in his office when he received a call from Mike Hazen. “This is a call you



AN ACCIDENT at Sandia’s 10,000-foot sled track has caused the Labs to take a close look at its safety practices. (Photo by Randy Montoya)

didn’t want to get,” Mike told Tom, briefing him quickly on the accident at the track. Tom and Al proceeded to the Labs’ Emergency Operations Center, which had been staffed to deal with the accident. Tom talked about the “agonizing” hours immediately after the accident when the medical status of the hospitalized worker wasn’t known. Ultimately, Tom said, it became clear that the individual was in good hands and “we’ve since found out he will recover.”

Tom noted that he and the management team will be engaged in a broad communications outreach “and this [all-hands] meeting is the evidence of that.”

He asked all Sandians to spend time with their department managers to discuss the accident, to reflect on safety issues within their organization. Each manager, Tom said, will then pass along some of the key ideas generated in the discussions to their directors’ offices for potential further action.

Tom noted that Sandia “seems to have the full confidence of DOE” as it formulates its response to the accident, adding that the Labs is committed to learning from the accident and responding to results cited within the final investigation report.

“It’s not a good situation to be in; it’s not the kind of situation you’d like to find an institution like this in, but it is where we are and we have to move forward in a way that will make us even better,” he said.

Tom gave high marks to Sandia’s immediate response to the accident itself. Communications were very good, he noted. “Our emergency teams responded quickly, the med-evac team responded quickly, and we

used our Emergency Operations Center in a way that makes you proud of our ability to respond.”

In the days and weeks ahead, Tom said, as the follow-up response to the accident goes forward, the Labs has an opportunity to demonstrate that “we are committed to excellence” in everything we do, including first and foremost safety of our workforce.

“We can only address this challenge and become better because of it,” he said, “if we all support each other.”
— Bill Murphy

What is a Type B investigation?

According to DOE documentation, a Type B investigation is required for “Any accident that results in the hospitalization of one or more DOE, contractor, subcontractor employees, or members of the public for five continuous calendar days or longer due to serious injury (DOE Order 225.1A, incorporating the definition in 49 CFR 830.2), occupational illness (except members of the public), chemical exposure, or biological exposure.”

There are also other parameters that call for Type B investigations but this language describes the conditions that led to the sled track accident being classified as a Type B accident. (The injured worker was hospitalized for five days or more.)

Library secures additional funding for books, journals, e-content

By Neal Singer

It’s a happy moment for those who believe the Sandia Technical Library needs more funding to maintain a first-rate library presence.

Library Board head Julia Phillips (1100) and David Williams, director of Information Solutions and Services Center 9500, say the library has received an infusion of \$391,000 in additional FY08 funds, as well as a baseline addition of \$700,000 to increase library content for FY09 and every year thereafter, finances permitting.

“All centers had an opportunity to submit requests to the board for journals, databases, and standards, and we have prioritized the input we have received,” says Julia. “We also intend to use some of the funding for book purchases and to cover the costs of document delivery.”

The FY08 money was allotted by the Program Leaders Council (PLC) in late August as year-end dollars. The PLC determines the distribution of monies to the IES organization.

According to librarian Donald Guy (9536), the \$391,000 went to purchase 2008 Springer eBook titles that had not been already purchased and the complete 2009 Springer eBook collection.

“The total eBooks purchased included more than 6,000 with new content in the following subjects: architecture, behavioral science, biomedical and life sciences, business and economics, chemistry and materials science, computer science, earth and environmental sciences, engineering, humanities, social sciences and law, mathematics and statistics, medicine, physics and astronomy, and professional computing and web design,” Guy emailed the *Lab News*. “Two databases [were also included]: one covering defense, security, and terrorism information and one covering directory information for government employees at all levels, including structural and organizational information and federal news.”

Sandia Chief Information Officer Art Hale (9600) says that operational changes made available some end-of-year funds for FY08.

“As to FY09,” Art says, “the Library Board had identified the need for \$700,000 in additional e-content to provide a baseline library content allocation of \$2 million. Julia Phillips, in her role as an adjunct PLC member, introduced the baseline increase request. PLC members, including myself, supported funding for additional library content.” Other adjunct members also supported the request.

Dennis Miyoshi receives NNSA’s Gold Medal for 39-year career



A JOB WELL DONE — Dennis Miyoshi (ret.), joined by Center 6400 Director Ron Moya and Labs Deputy Director Al Romig, displays the recognition plaque he received from NNSA. Dennis, who recently retired after a 39-year career at Sandia, was honored with NNSA’s Gold Medal. The citation reads, in part, “Your leadership in advancing security technologies and systems engineering at Sandia National Laboratories enabled the Department of Energy and the National Nuclear Security Administration to accomplish our missions with the confidence that domestic and international nuclear weapons and materials are appropriately protected.”



Wild horses

(Continued from page 1)

FREE SPIRITS — Wild horses roam the Jicarilla Wild Horse Territory in northern New Mexico.

with a sensor technology that will make it easier to know when the horses are in a trapping corral.”

The request came through the New Mexico Small Business Assistance Program — the Labs-run program that allows Sandia to apply a portion of the gross receipts taxes it pays each year to provide technical advice and assistance to New Mexico small businesses.

More than 425 wild horses roam the Jicarilla Wild Horse Territory, an area Forest Service officials determined in an assessment four years ago could only accommodate between 50 and 105 of the animals. Grass and foliage that serve as feed for the horses and other wild animals are running thin, say Forest Service officials, and concerns exist that there may not be adequate grazing areas. Right now, the horses appear healthy, but that could

Carson National Forest has horses available for adoption. People interested in adopting a wild horse can call (505) 632-2956 or go online at www.fs.fed.us/r3/carson.

change if food sources disappear.

The Bureau of Land Management and National Forest Service routinely round up wild horses in over-populated areas, relocate them to central holding areas, and attempt to adopt them out. This fall the Carson National Forest initiated a wild horse gather program and plans to round up 93 horses. Horses from the Jicarilla territory go to Farmington, where they are put up for adoption.

Roundup a tedious process

Horse roundup is a tedious process. Once horses are

known to be in a certain area, a corral is built, and bait — salt and minerals — is set out. Later, hay is added as a further enticement. The trapper, a contractor with Mt. Taylor Mustangs, then sits in wait inside a trailer located 50 to 100 yards away from the corral. A video camera connected to a monitor in the trailer tracks horse visitors. When the trapper sees the horses inside the pen on the monitor, he pushes a button to remotely close the gate.

The limitation of this method, says Madrid, is that sometimes the horses sense the human. This makes them shy away from the corral.

It became Casey and Josh’s job to come up with a way the trapper can be in a camp several miles away from the corral, still be able to watch the horses, and then remotely close the gate.

“We knew the system had to be cost effective. Otherwise the

National Forest Service could not afford to deploy it,” Casey says. “We knew that developing a new sensor system from the ground up would cost way too much. So we decided to adapt something already developed here at Sandia or modify an off-the-shelf product.”

Seismic sensor detects horses

The two researchers had working experience with a system designed a couple of years ago at Sandia for national security purposes. About the size of a shoe-box, each waterproof plastic container holds a radio transmitter, electronics processor, and externally connected seismic sensors. Casey and Josh are also adding the capability for a thermo-imaging video camera. A photovoltaic solar panel would charge the batteries, making the unit self-sufficient.

The system is designed for the seismic sensors to detect when an animal the size of a horse is in the vicinity. Once alerted by the sensors to the presence of an animal, the camera turns on and sends an image via the radio transmitter to the trapper who might be in a small camper as far as five miles away.

The trapper would monitor the camera and as soon as he sees several horses in the corral, he would shut the gate from his remote location. Shortly after, he would herd the animals into a horse trailer — a difficult process in itself — and take them to a holding pen.

“What’s really nice about this system is that the trapper can simultaneously monitor multiple sites, which could be separated by miles. Right now the trapper must sit in wait for several days, sometimes weeks, waiting for the right moment to close the gate. The conditions in which they wait can be quite extreme because they cannot use any heat, air-conditioning, or anything that would alert the horses to their presence. Allowing the trapper to move to a remote location relieves the stress from both the trapper and the horses,” Casey says.

As a second option, Casey and Josh are also looking at modifying commercially available off-the-shelf systems. They are finalizing their recommendations and plan to deliver them to the National Forest Service soon.

“We anticipate the technology Sandia will recommend will be a huge help to us,” Madrid says. “Having the ability to monitor multiple traps at the same time will make our work much more efficient and productive.”

About the Small Business Assistance Program

In 2000 the New Mexico Legislature established the New Mexico Small Business Assistance (NMSBA) Program to help small businesses throughout the state by providing technical support from Sandia. In 2007 the legislature amended the program’s enabling legislation to expand the NMSBA and add Los Alamos National Laboratory as a program partner.

The NMSBA Program has provided thousands of businesses expert guidance on technical issues. The program delivers a cost-effective means for economic development through business creation,

sustainability, expansion, and workforce development. In the last eight years the NMSBA has assisted more than 2,077 small businesses with more than 2,170 projects. In 2007 alone, 288 businesses were helped.

Since its inception, program participants have created 495 jobs across the state, decreased their operating costs by more than \$6,951,900, and increased their revenues by more than \$11,696,700. Also, nearly \$5.5 million has been invested in expansion efforts and purchase of local goods and services.

Weapon Intern Program graduates 10th class



THE WEAPON INTERN PROGRAM has graduated its 10th class. The 22 2008 graduates representing Sandia, NNSA, the Kansas City Plant, and the US Air Force join 179 previous graduates, 121 of them Sandians. This year’s graduation ceremony, held in late August, included speeches from Labs Deputy Director for Nuclear Weapons Joan Woodard and Sandia Chief Weapons Engineer Steve Rottler as well as Steve Goodrum from NNSA and Brig. Gen. Everett Thomas from the Air Force Nuclear Weapons Center. The 2009 class began in late September with 16 individuals, again representing Sandia, NNSA, the Kansas City Plant, and the US Air Force.



CASEY GIRON, left, and Josh Jacob examine a thermal imager. (Photo by Randy Montoya)



POPULAR MECHANICS AWARD WINNER Chuck Andraka stands in front of Stirling Energy Systems' solar collector dishes at the Solar Thermal Test Facility. Work he did on the dishes to beat a solar-to-grid system conversion efficiency record recently won him a *Popular Mechanics* magazine Breakthrough Innovator Award. (Photo by Randy Montoya)

Chuck Andraka goes from avid young reader of *Popular Mechanics* to magazine award winner

By Chris Burroughs

When Chuck Andraka (6337) was in the fifth grade, he would hide classroom *Popular Mechanics* magazines in his desk and read them when the teacher wasn't looking. One day his teacher caught young Chuck and then gave him his collection of the magazine, telling him he had to read them at home.

Last week Chuck, now a solar engineer at Sandia's National Solar Thermal Test Facility, won a *Popular Mechanics* Breakthrough Innovator Award for work he did with Stirling Energy Systems (SES) to beat a solar-to-grid system conversion efficiency record on an SES Stirling solar collector dish.

"It was kind of uncanny that I won this award from *Popular Mechanics*," Chuck says. "I used to read the magazine all the time."

Chuck was the kind of kid who built go-carts, model rockets, and model airplanes. In the third grade he designed a rocket, and his parents made him take all the pages of math he did to design it to school to show his teacher.

He went to a high school "full of geeks," as he put it, that emphasized engineering. Even there, he managed to have fun serving as the high school mascot; he dressed up as a pirate complete with a parrot on his shoulder.

For college he chose Virginia Tech.

"I looked at other schools, particularly Washington University in St. Louis. But I didn't like the urban campus. Virginia Tech was for me," he says.

He got his BS and MS degrees in mechanical engineering in four years. But he wasn't a bookworm, despite the heavy workload. On beautiful days he would slip away to go canoeing with his roommate on the New River located near the campus.

Shortly after graduating with his MS, he married his college sweetheart and moved to Albuquerque to take an engineering job at Sandia.

"I did all that in one month," Chuck says. "And I don't like change."

Chuck says he initially planned on working at either Bell Labs or IBM. After an interview at IBM, he realized that the company wanted electrical engineers, not mechanical engineers. He renewed his job search and rediscovered Sandia. He had used the Labs as a reference in a high school science fair project years before.

He went through a series of interviews in different

departments at Sandia and ultimately took a job in a weapons group that supported the solar department.

"I had no background in solar," Chuck says. "My interest was heat transfer and fluid mechanics, but that fit nicely with the solar projects."

In 1988, after four years in the first department, he moved to the solar group where he found his niche — developing electronics and optics and doing heat transfer analysis and design for solar dish collectors.

"When I started out, it was just a fun job," Chuck says. "I've since grown to believe solar is a big part of the answer to our nation's energy needs. Wind is big, but it will never feed all our energy needs. Solar is limitless."

So limitless, he suggests, that certain areas of the southwestern US could supply seven terawatts of power through solar energy, compared to the one terawatt of power that is supplied by all the nation's energy sources today, including coal, natural gas, nuclear power, and wind.

Besides being the answer to energy needs, Chuck sees

concentrated solar power as a possible boon for the struggling American automobile industry.

"There is a natural marriage between the auto industry and solar. Stirling dish concentrating dishes are very much like automobiles. They have steel frames, engines, and glass — just like cars," he says. "The dish systems could easily be built in auto plants and provide jobs to laid-off auto workers."

Chuck may be one of the country's foremost experts in the area of concentrated solar power — he testified before a Senate field committee earlier this year on the subject and was the only Sandian besides Labs Director Tom Hunter to go on the field at the solar tower when President Bush visited three years ago — but he is also a family man with four children, two in college and two at home being home-schooled. He is an elder in his church and is seriously into model airplanes.

"My world is very fulfilling," Chuck says. "My family, my church, my work, and my play make for a good life."

Chuck Andraka shares award with SES chief

Sandia engineer Chuck Andraka (6337) and Bruce Osborn, chief operating officer of Stirling Energy Systems (SES), were honored with a *Popular Mechanics* magazine Breakthrough Innovator Award Oct. 15 during a ceremony at the Hearst Tower in New York City.

Sponsored by Bristol-Myers Squibb, the Breakthrough Awards celebrate innovations poised to change the world and the personalities behind them. The joint Sandia/SES award was among 21 awards that the magazine presented at the ceremony.

The award recognizes a solar-to-grid system conversion efficiency record set by SES Serial #3 solar dish Stirling system in January 2008 at Sandia's National Solar Thermal Test Facility. The existing 1984 record of 29.4 percent was toppled by the new 31.25 percent net efficiency record.

The conversion efficiency is calculated by measuring the net energy delivered to the grid and dividing it by the solar energy hitting the dish mirrors.

"We are honored to be tapped for this award by *Popular Mechanics*," says Chuck. "Gaining two whole points of conversion efficiency in this type of system

is phenomenal, and the recognition by the magazine is notable."

Serial #3 was erected in May 2005 as part of a prototype six-dish model power plant at the Solar Thermal Test Facility that produces up to 150 kilowatts (kW) of grid-ready electrical power during the day. Each dish unit consists of 82 mirrors formed in a dish shape to focus the light to an intense beam.

The solar dish generates electricity by focusing the sun's rays onto a receiver, which transmits the heat energy to a Stirling engine. The engine is a sealed system filled with hydrogen. As the gas heats and cools, its pressure rises and falls. The change in pressure drives the pistons inside the engine, producing mechanical power, which in turn drives a generator and makes electricity.

Osborn says, "SES is working to commercialize the record-performing system and has signed power purchase agreements with two Southern California utilities for up to 1,750 megawatts (MW) of power, representing the world's two largest solar power contracts. Collectively these contracts require up to 70,000 solar dish engine units." — Chris Burroughs



Emergency Operations exercise . . .

Operation Cohesive Authority



Photos by Bill Doty

Note: Each year, Sandia's Emergency Management group conducts a comprehensive emergency exercise to gauge the Labs' ability to respond to a real emergency if and when one occurs. This year's annual exercise, held in August, was no exception, engaging every component of Sandia's response capabilities, from first responders and security personnel to consequence assessment teams, Emergency Operations Center personnel, and public information officers. In addition to the annual exercise, Emergency Management conducts frequent drills and exercises throughout the year.



Benefits Choices 2009 — Open Enrollment is Oct. 20-Nov. 10

Flexible Spending Accounts — formerly known as Reimbursement Spending Accounts — increase your take-home pay



Important 2009 change for nonrepresented employees only: Health care (FSA) maximum increased from \$4,000 to \$5,000

What is an FSA?

An FSA is a Flexible Spending Account, which is authorized by the Internal Revenue Service (IRS) and available through employers. This type of account allows you to set aside money for nonreimbursed health care and/or day care expenses on a pretax basis. As you incur health care and/or day care expenses throughout the year, you submit a claim for those expenses, and you are reimbursed with tax-free dollars from your PayFlex account.

A Health Care Account reimburses you for out-of-pocket expenses, meaning those expenses that are not covered by your medical, dental, prescription or vision programs. These expenses include deductibles, copays, coinsurance, certain over-the-counter (OTC) expenses, eyeglasses, contact lenses, eye care solutions, and even laser-vision correction.

The Day Care Account reimburses you for expenses you incur to allow you and, if married, your spouse to work. These expenses include day care, before-and-after school programs, nursery school or preschool, summer day camp, and even adult day care.

When you use either one, or both of these accounts, you reduce your taxable income so you pay less in income taxes. To see a list of all eligible expense items for either a health care or a day care account, visit the PayFlex website at <http://www.mypayflex.com>.

FSA tax savings example

Annual Tax Savings	Without an FSA	With an FSA
Salary	\$50,000	\$50,000
Annual Pretax Election	\$0	(\$3,000)
Taxable Income	\$50,000	\$47,000
Taxes Withheld (30.65%)	(\$15,325)	(\$14,405)
Annual After Tax Expenses	(\$3,000)	\$0
Take-Home Pay	\$31,675	\$32,595
Increase in Take-Home Pay	\$0	\$920

How do I get started?

Your employer has made setting up an FSA simple. During Open Enrollment (Oct. 20 to Nov. 10), you will enroll to put aside a portion of your salary on a pretax basis. Employees must re-enroll in this account during Open Enrollment each year. This amount you choose to set aside will be deducted from your paycheck in equal amounts each pay period throughout the calendar (plan) year. If you decide to enroll in a health care and/or day care account, you will need to carefully estimate the amount you will spend on out-of-pocket health care expenses and/or dependent day care expenses during the plan year.

When estimating your expenses, please remember that several over-the-counter items such as aspirin or other pain relievers and cold/sinus remedies are also eligible for reimbursement. To assist in estimating your out-of-pocket expenses, use the FSA Savings Calculator located at www.mypayflex.com.

How do I process my expenses?

As you incur health care and/or day care expenses, you will submit a claim for reimbursement online using Express Claims at www.mypayflex.com or by completing a paper claim and sending to PayFlex by fax or mail. Reimbursements are made on a scheduled basis; however, you can file claims as often as you would like. Your FSA dollars will be used for reimbursement, which will be provided by check or direct deposit into your bank account. You may elect to have your reimbursements deposited directly into your checking or savings account, simply by providing your account information online via the Direct Deposit link at www.mypayflex.com. You can also process expenses using the PayFlex card (you must still retain all receipts for PayFlex card purchases).

Processing methods

Express Claims: www.mypayflex.com
Paper Claim Fax: 402-231-4310
Paper Claim Mail: PayFlex Systems USA, Inc.
PO Box 3039
Omaha, NE 68103-3039

PayFlex card

What is the PayFlex™ card?

The PayFlex™ card is a debit card that electronically accesses your health care account to pay for eligible expenses. You can use the card at qualifying merchant locations wherever MasterCard is accepted. Qualified merchants include physician and dental offices, vision providers and merchants who have implemented an inventory information approval system (IIAS).

Why should I use the PayFlex card?

The card allows you to pay for eligible expenses at the point of service. Participants who use the PayFlex card take advantage of four key benefits:

- Immediate payment of your expenses from your health care account
- Increases your personal cash flow
- No claim filing due to point-of-sale approval
- Ease of use of your pretax funds

Using the PayFlex card is a great way to help relieve you of filing claims; however it is important that you keep all itemized documentation for the entire plan year in the event the information is requested by PayFlex to comply with IRS regulations.

How does the PayFlex card work?

The PayFlex card is accepted at health care merchants and merchants who have implemented an inventory information approval system (IIAS) which only allows eligible health care expenses to be purchased. Acceptable merchants include physician offices, hospitals, dental offices, mail order prescription vendors, hearing and vision care providers. The card will also work at discount stores, grocery stores, and pharmacies provided the merchant has implemented an IIAS.

As you incur eligible health care expenses, you simply present your PayFlex card for payment. The system will validate that your coverage is active and that you have available funds to cover the transaction. You may view a list of eligible expense items on our website at www.mypayflex.com.

You must retain documentation of your expenses, as you may be required to provide documentation of your transactions. IRS only allows certain transactions to be approved without itemized documentation. Documentation includes an itemized receipt with the merchant name, name of the item/product, date of service, and amount.

Is this process completely paperless?

Using your PayFlex card for your health care expenses will prevent you from having to submit a claim form for reimbursement. This will reduce your paperwork; however, in order to meet IRS guidelines, documentation of your expenses may be required. Therefore, you must keep copies of all detailed receipts and itemized statements (not the credit card receipt) for each purchase within the plan year. You may receive a letter from PayFlex requesting documentation of an expense, which would require you to submit this information to PayFlex to comply with IRS regulations.

How do I order additional cards for a dependent or spouse?

To order additional cards for a spouse or dependent, go to www.mypayflex.com and click on Login. Then click on Debit Cards on the left navigation bar and select Card Order. Fill in the required information and click Submit. You should receive your additional card(s) in the mail in a plain, white envelope within 10-15 business days.

How do I keep track of the PayFlex balance in my account?

To check the balance in your account, view transac-

tions, or check the status of a claim, simply access your plan information at www.mypayflex.com. PayFlex has also implemented an enhanced Integrated Voice Response (IVR) system providing immediate access to account balances, overpayment resolution, as well as to obtain fax numbers and addresses for claim submission. To access our IVR system, call 800-284-4885.

What if I don't use all the money in my account? Will I lose it?

Yes. Money left over in your account at the end of the year is forfeited. You can avoid forfeitures by carefully reviewing your prior year's expenses and planning only for predictable costs. Sandia has elected to include a grace period within the health care plan, so you will be allowed 75 additional days after the end of your plan year to use your FSA funds. For example, if your plan year ends on Dec. 31, Sandia will allow expenses to be incurred through March 15. In addition, PayFlex has established partnerships with various online vendors to help you spend your FSA dollars more efficiently. Accessible via our website, you can buy items such as glasses, contact lenses, and eligible OTC medications using your PayFlex card, or any other major credit card. When using your own credit card, you will receive a receipt to use for reimbursement.

What is available online at www.mypayflex.com?

- Account Information
- FSA Tutorial
- FSA Savings Calculator
- Expense Planning Worksheets
- Listing of Eligible & Ineligible Expense Items
- Frequently Asked Questions
- Administrative Forms & Publications
- IRS Forms & Publications

Questions?

If you have any questions or wish to obtain account information via our IVR system, call PayFlex at 800-284-4885. Customer service representatives are available 7 a.m. to 7 p.m. CST, Monday through Friday.

Day care expense requirements

Day care expenses are those that must be incurred to enable you and your spouse, if married, to be gainfully employed. The expense must be incurred for services received after the effective date of your election and during the plan year to which it applies. The expenses must be for a qualifying individual. This includes a dependent younger than age 13, a spouse, or other dependents who are physically or mentally incapable of self-care and for whom you can claim an exemption. The day care services must be provided by an eligible day care provider. This includes a licensed day care facility that complies with applicable state and local laws and any individual who is not a tax dependent of yours or a child of yours age 19 or older. Day care expenses must be for services incurred, not for services to be provided in the future. The annual expense reimbursement may not exceed the lesser of your earned income, if married; your spouse's earned income; or \$5,000 (\$2,500 if married, filing separate income tax returns). You must file Form 2441 annually with your individual tax return identifying all your day care providers.

Health care expense requirements

Health care expenses must be incurred for services rendered on or after the effective date of your election and during the plan year including the grace period as explained above. Each individual, for whom you can incur expenses, generally includes a dependent who you are entitled to claim as dependent on your federal tax return, as well as a spouse or other tax dependents who are physically or mentally incapable of self-care. All expenses must be for services incurred and already provided, not for services to be provided in the future. In addition, the expenses may not have been reimbursed and must not be reimbursable by insurance or any other source. You cannot claim the same expenses as a deduction on your annual income-tax return.

(Continued on next page)

FSAs

(Continued from preceding page)

Other ineligible items include individual insurance premiums, other group insurance premiums, and long-term care expenses.

Special plan rules

- You may enroll in a FSA only during Open Enrollment or when you first become eligible. This enrollment covers your pay periods from your effective date through the end of the plan year.
 - Once you establish your plan year contribution, you may only change it if you experience a change in status (qualifying event).
 - Any amount(s) left in your account(s) at the end of the plan year will be forfeited.
 - You may file plan year claims through the run-out period as established by the plan.
 - You do not have to enroll in your employer's health insurance plan to participate in the Flexible Spending Accounts. If you or your family members are covered for health insurance elsewhere, you can still claim qualifying out-of-pocket health care expenses under the FSA.
 - Remember that your expenses must be incurred during your period of coverage.
- Expenses are considered as having been incurred when you are provided with the health care or day care and not when you are formally billed, charged for, or pay for the care.

Change in status rules

IRS guidelines may allow you to change your plan contribution during the plan year only upon the following conditions:

- Change in legal marital status (marriage, divorce,

- legal separation, annulment, or death of a spouse)
- Change in number of tax dependents (birth, adoption, or death)
 - Change in employment status that affects eligibility
 - Dependent satisfying or ceasing to satisfy coverage requirements (reaching limiting age, marriage)
 - Change in residence that affects eligibility
- To apply for a change, you must complete and submit a mid-year change-in-election form to Sandia Benefits within 31 days of the date of the event.

— Article content provided and approved for reprint by PayFlex

Voluntary Group Accident (VGA) insurance

VGA insurance is an optional, employee-paid accident insurance that provides financial protection to employees and families for covered accidents. Employees can purchase insurance coverage in amounts from \$10,000 to \$300,000, in units of \$5,000 (maximum \$300,000 combined coverage in all plans). Premiums are paid through payroll deductions. Employees have three types of coverage options to select from and may select any combination:

- Plan I-A: Employee-Only Coverage.
- Plan I-B: Family Plan may include employee, spouse, and children. Specific rules apply to coverage of dependents. The election amount chosen will result in a benefit amount as follows: spouse only, 50% of election amount; spouse and children, 40% and 10% each; children only, 15% each.
- Plan II: Employee-Only Common Carrier insurance covers the employee for accidents aboard public transportation. For more information on the plan, cost of the coverage, and how to enroll, visit the Open Enrollment website.

CORRECTION: On page 10 in the Oct. 10 issue of the *Lab News*, a series of tables provided details on retiree medical plan premium sharing costs. Table E was mislabeled. It should have read: "Table E: Employees who retired after Dec. 31, 2002, with 10-14 years."

Long-Term Disability Plans (Special enrollment for nonrepresented employees only)

The Sandia Long-Term Disability (LTD) Plan replaces part of your pay if you are disabled according to the terms of the plan. The LTD Plan may begin benefit payments when your Sickness Absence Plan (SAP) benefits are exhausted. The supplemental buy-up LTD benefit goes into effect the day following the completion of 12 months of premium payment.

All employees can enroll in this plan anytime during the year, but are required to provide evidence of insurability and your application can be denied. If you enroll in the LTD+ during Open Enrollment the evidence of insurability requirement is waived (for 2009 Open Enrollment Only).

Sandia insures all employees with a Long-Term Disability Basic Plan (50% salary protection, up to a monthly maximum benefit of \$7,500 per month). Employees can choose to purchase an additional 10%, with an additional \$1,500 monthly maximum (or total monthly maximum of \$9,000) or 20%, with an additional \$3,000 monthly maximum (or total monthly maximum of \$10,500).

LTD+ Plan premiums

- \$0.182 per \$100 of monthly salary, for an additional 10% benefit
- \$0.403 per \$100 of monthly salary, for an additional 20% benefit

Calculation example:

You earn \$35,000 annually (\$2,917 monthly) and enroll in the 10% additional LTD+ Plan benefit.

$\$35,000 \div 12 = \$2,917$
 $\$2,917 \div 100 = \29.17
 $\$29.17 \times .182 = \5.30 monthly premium

For more detailed information on the Long-Term Disability Plans visit <http://oe.sandia.gov> or refer to the LTD Plan Summary Plan Description (SPD).

Benefits Choices 2009

Open Enrollment:

Oct. 20 to Nov. 10, 2008, 5 p.m. (MST)

Need more information? Visit the Open Enrollment website for represented and nonrepresented employees and retirees: <http://oe.sandia.gov>

Health Benefits and Employee Services (HBE):
Get Answers @ <http://hbe.sandia.gov> or call HBE Customer Service at 505-844-HBES (4237) or 1-800-417-2634, ext. 844-HBES (4237)

Vacation Buy Plan — buy up to 44 hours

Every year during Open Enrollment, employees have the option to buy vacation. The Vacation Buy Plan (VBP) is an optional plan that allows employees to purchase vacation on a pretax (before federal, state, and Social Security taxes are deducted) basis. Why would you want to purchase vacation as opposed to taking time off without pay? The vacation hours you purchase are deducted evenly from your biweekly paychecks throughout the calendar year, rather than having a financial impact all at once.

Employees may purchase a minimum of eight hours up to a maximum of 44 hours of vacation. The cost of each vacation hour is determined by dividing your full-time annual base pay as of the beginning of the calendar year by 2,080. Purchased vacation can be used once carryover, accrued/posted, and convertible vacation have all been depleted.

Tip for managing your bought vacation

Consider using your total bought vacation early in the calendar year when your vacation balance is low or at zero balance (must have depleted carryover, accrued/posted and/or convertible vacation).

Employees that hold on to the bought vacation may run into charging barriers because they have accrued too much vacation into their balance. Remember, in order for your bought vacation to be charged, you must physically place the bought vacation code (A310) on your timecard.

Unused elected vacation hours will be sold back in the last paycheck in December at the same rate as purchased. Upon termination or retirement, elected vacation hours not used, but paid for, will be sold back at the same rate as purchased. For more information on the Vacation Buy Plan, visit <http://oe.sandia.gov> or refer to Sandia's VBP Summary Plan Description (SPD).

Sandia works with city to assess ways to protect Albuquerque youth from cyber predators

By Michael Padilla

A Sandia report assessing ways to help protect Albuquerque children and teens from cyber predators was recently provided to the city as requested by Mayor Martin Chavez.

The assessment, "Keeping Albuquerque's Children Safe from Cyber Predators," was conducted by Sandia's Center for Cyber Defenders program.

Tim McDonald, manager of Information Assurance Systems Dept. 5637, says the CCD evaluated programs nationwide and provided recommendations for the City of Albuquerque based on established criteria.

"Any successful cyber defender program must be based on community, school, and parental involvement," says Tim. "It's important that parents are proactive in determining what their children are viewing, not only on their computers but also on their cell phones and other communication devices."

Existing programs in other major US cities were reviewed and a behavior-based cyber predator threat model was produced to help assess and determine which existing programs best address these problems.

Recommendations were given on informational website development, comprehensive interactive programs to inform children, and complementary parental information programs.

The primary findings in the assessment indicate that

the most effective cyber predator awareness programs include an informational website containing links to other resources. The assessment found that California, North Carolina, Michigan, and Arizona are the highest-ranked states in the assessment, and should thus serve as good models. In addition, the report mentions that control and monitoring tools, informative handouts, and training or seminar sessions were the primary criteria differentiating high- and low-ranked programs.

Mayor Chavez thanked Sandia for preparing the report at a recent news conference.

"One of the most disturbing crimes against our youth is cyber stalking," Chavez said. "Recently, a *USA Today* story revealed that nationwide there are more than 600,000 unique computers trafficking child pornography over the Internet."

Chavez announced a partnership with the Albuquerque Police Department, Sandia, and Albuquerque Public Schools to combat cyber stalking. A town hall meeting is set for 11 a.m. Saturday, Nov. 15, at the Don Newton Community Center in Taylor Ranch. Topics for the meeting will include an in-depth discussion of cyber stalking, cyber stalking of children and young adults,



CYBER DEFENSE — Albuquerque Mayor Martin Chavez at a recent news conference thanks Sandia for its cyber security assessment performed for the city. Div. 3000 VP John Slipke, left, and Tim McDonald (5637) participated in the news conference. (Photo by Randy Montoya)

how to report cyber crime, how to protect against cyber stalking, and what to do if you are a victim.

Sandia Labs Director Tom Hunter was instrumental in discussing the project with the mayor.

The report (SAND 2008-5561) was prepared by Felycia Aranda, Raquel Hernandez, Erin Duggan, and Andrea Walker.

Mileposts

New Mexico photos by Michelle Fleming



Ernest Sanchez
40 4122



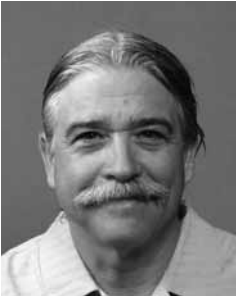
Tommy Cabe
35 5635



Mary Cocco
30 10012



Reggie Tibbetts
30 4234



Stephen Bauer
25 6315



Bob Benner
25 1422



Mark Boslough
25 1433



David Duggan
25 5629



Belinda Holley
25 3521



Richard Kuehn
25 5525



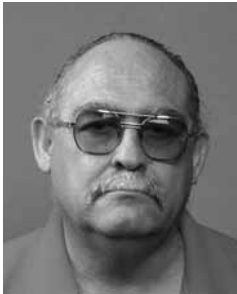
Charles Little
25 6473



Frank Lujan
25 10242



Steve Martin
25 5935



Dale Martinez
25 4242



Cynthia Nelson
25 5932



Jennifer Nelson
25 6060



James Phelan
25 6418



Arian Pregenzer
25 6720



Debra Chavez
20 10617



Merlin Decker
20 5415



Patrick Griffin
20 1384



Grant Heffelfinger
20 8330



Courtenay Vaughan
20 1423



Ronald Weagley
20 9538



David Castillo
15 4139



Vicky Claunch
15 8332

Recent Retirees

Bob Moyer
49 2542

Gene Arnot
44 2992

Charlie Field
40 5434

Amy Faucett
30 10617

Donald Bailey
25 4810

David Dobias
22 4825

Sharon Dobias
21 10641

Brian Behling
20 4827

Marjorie Kinkel
15 10653



Paul Romero
25 4133



Barry Spletzer
25 6470



Timothy Vargo
25 2661



Steven Rohde
20 5337



Eric Tomlin
20 5526



Jeffrey Joseph
15 5526



Patricia Nitschke
15 10265



Sandra Pacheco
15 9536



WINGED MIGRATION — Monarch butterflies, whose mysterious multigenerational migration each year is still the subject of deep study by butterfly experts, pause on their journey to points south on a chamisa bush near Sandia’s solar tower. *Lab News* photographer Randy Montoya, who was at the solar tower location to photograph Chuck Andraaka (see photo and story on page 6), says thousands upon thousands of the monarch butterflies were resting and feeding on the the chamisa near the facility. According to Wikipedia, monarchs from the Rocky Mountain region migrate to the sanctuaries of the Mariposa Monarca Biosphere Reserve in the Mexican states of Michoacán and México. They travel some 50 miles a day on their journey. (Photo by Randy Montoya)

Venture into the unknown

Elebeboa May awarded Woman of Color All Star

By Iris Aboytes

Sandian Elebeboa “Chi-Chi” May (1412) has been selected a 2008 Women of Color All Star. She will be honored at the National Women of Color Science, Technology, Engineering, and Mathematics (STEM) Conference to be held Oct. 23-25 at the Hilton Anatole Hotel in Dallas, Texas. Chi-Chi received the award for her work bridging the disciplines of engineering and biology.

“Chi-Chi has made remarkable breakthroughs by bringing quantitative methods to real biological problems,” says her boss Danny Rintoul. “The key to her success has been a combination of exceptional ability and the willingness to immerse herself in both the biological and mathematical research teams.”

Chi-Chi was awarded a Mentored Quantitative Research Career Development Award by the National Institutes of Health’s National Heart, Lung, and Blood Institute in 2005. The five-year grant is the first of its kind awarded to a Sandian. It enables Chi-Chi to receive training in the molecular aspects of infectious diseases. Through the grant she also participates in a mentored research program focused on understanding the genetic basis of mycobacterium tuberculosis latency and reactivation.

The objective of the research is to identify, model, and analyze genetic and metabolic networks and immune response pathways involved in the latency and reactivation process of tuberculosis, which has been declared a global health emergency by the World Health Organization.

Research will be conducted collaboratively with the University of New Mexico Health Sciences Center/



ELEBEBOA “CHI-CHI” MAY

School of Medicine and Los Alamos National Laboratory.

Chi-Chi earned a bachelor’s, master’s, and PhD from North Carolina State University in Raleigh, N.C., in computer engineering. She had a dual interest in both math and biology, but the logic of computers won her over.

Chi-Chi did not exactly plan on coming to Sandia. Her fortuitous journey began when she submitted a résumé at a career fair. A phone call ensued asking her to consider the possibility of coming to Sandia to help address Sandia’s vision for building the biological sciences. “What struck me is that Sandia, an engineering lab, wanted to marry mathematics to biology,” she says. “I was excited and wanted to be a part of it. I would be working on merging the two areas I enjoyed working on. I feel blessed. I have been given the opportunity to work at the forefront of a nontraditional area. It is a joy to work here.”

Chi-Chi’s only concern was adjusting to the Albuquerque landscape. “It was different than the green I was used to,” she says. “Everything was brown, few trees, and rocks where grass should be.” Albuquerque has grown on her, she says. “It took a while but I have begun to appreciate the different shades of brown. I love the mountains and the more laid-back life. I never thought about humidity; now I realize what humidity is.”

Chi-Chi was born in Nigeria, but her father, Ude Eke Eni, brought the family to the United States when she was four. “My father is one of the smartest persons I know. He had a passion for learning and brought our family here for a better education. He and my mother, Glory, worked and attended school while raising four children.” Both parents set the bar high for education. Her father has several master’s degrees and an MD, while her mother received her master’s degree in counseling and works as a substance abuse counselor.

Chi-Chi and her husband Kevin have two boys, Mathew and Jaden. “They keep us busy,” says Chi-Chi.

She recently joined the advisory board of Ralph J. Bunche Academy as a way to help others have the

opportunities she herself was given. “I believe education is the great equalizer,” she adds. “I know that my achievements are not mine alone but represent a lot of people,” she says. “I merely stand on the shoulders of people who came before me. Because of my parents’ sacrifices, their faith, and their willingness to leave their home to venture into the unknown — I am where I am today.”

Bone marrow registration



OCTOBER 29, 2008
7-9 a.m. & 11-1p.m.

 Sandia National Laboratories

YOU COULD BE THE ONE MATCH THAT SAVES A LIFE.

Remember **a match can come from anywhere.** Many minority populations are severely underrepresented in the bone marrow registry, and all populations can help. A simple mouth swab sample is taken to register.

For more information go to:
<http://marrow.sandia.gov>